

6. The casino game of *Chuck-a-Luck* involves spinning a cage with three dice in it. You bet \$1 on a single number from 1–6 and you win \$1 for each face-up appearance of your number. Because it is a bet, you lost your dollar only if your number appears on none of the three dice (e.g., suppose you bet on “5” and it come up on two dice—you receive \$2 and get to keep your original bet). There are 216 ways for three dice to come up ($6 \times 6 \times 6$). Let X = the amount won on each play of the game.
- Construct the probability distribution for *Chuck-a-Luck*. (Hint: there are four values of X)
 - What are your expected mean and standard deviation for each \$1 that you bet?
 - Suppose you hang around the *Chuck-a-Luck* game for a couple of hours and play 100 times. What is the probability that you do not lose money? Suppose you own the casino, and there are 10,000 bets placed in a 24-hour period. What is the probability that you make money?

ANSWERS TO PRACTICE EXAM 2, SECTION I

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|-------|-------|
| 1. e | 21. d |
| 2. d | 22. a |
| 3. d | 23. b |
| 4. a | 24. c |
| 5. c | 25. d |
| 6. a | 26. c |
| 7. b | 27. b |
| 8. e | 28. a |
| 9. d | 29. e |
| 10. d | 30. b |
| 11. c | 31. d |
| 12. c | 32. e |
| 13. e | 33. c |
| 14. b | 34. d |
| 15. c | 35. b |
| 16. d | 36. d |
| 17. b | 37. b |
| 18. d | 38. a |
| 19. c | 39. a |
| 20. e | 40. e |

SOLUTIONS TO PRACTICE EXAM 2, SECTION I

- The correct answer is (e). There is no way to tell how many terms are in Set A or in Set B from their boxplots. Hence, there is no way to compare the numbers above the medians.